NTC series connectors

Product Introduction

- Designed for VME64 and XVME64x electronic module supporting standard connector
- High reliable hyperboloid wire spring socket contact
- Can be applied to strong vibration harsh environment
- Connector has Faraday electric cage structure and realizing ESD (electrostatic discharge) protection
- P0/J0 module support 3.125Gbps high speed differential transmission
- RF contacts operating frequency range: 0～18GHz
- Application: aviation, aerospace, electronic, weapon
- Enterprise standard: Q/21EJ873

Main technical performance

[Mechanical performance]

——Shell: High-strength aluminum alloy
——Contact: Copper alloy with gold plating
——Insulator: LCP
——Identification guide pin: Stainless steel
——Sinusoidal vibration: frequency: 0～2000Hz, acceleration: 15G
——Random vibration: PSD(power spectral density): $0.2g^2$/Hz, rms value 16.4G
——Endurance: 4000 cycles

[Environmental performance]

——Operating temperature: -55℃~+125℃
——High temperature lifetime: 125℃, 250h
——Relative humidity (RH): 40±2℃, 90～98%
——Salt spray: 48h

[Electrical performance]

- LF contact (apply to P1/J1、P2/J2 module)

——Current rating: 2.5A
——Withstanding voltage: 1000V
——Insulation resistance: ≥5000 MΩ
——Contact resistance: ≤20 MΩ

- Differential contact (apply to P0/J0 module)

——Transmission rate: 3.125 G bps
——Characteristic impedance: 100±15Ω
——Current rating: 1A
——Withstanding voltage: 1000V
——Insulation resistance: ≥5000 MΩ
——Contact resistance: ≤20 MΩ

- HF contact (common use)

——Frequency range: 0～18 GHz

——Characteristic impedance: 50±1Ω

——Insert Loss: when operating frequency f is 5MHz～18GHz, ≤0.06$\sqrt{f}$ dB

——Voltage standing wave ratio (VSWR): ≤1.15+0.01 f

——Phase deviation：≤±5°

——Contact resistance：Center contact 5MΩ; Outer contact 3MΩ

Ordering Information

Basic series	**NTC64**	**T**	**434**	**M**	**E0**
Plug and receptacle type	T—Plug (installed with pin) Z—Receptacle (installed with socket)				
Contact layout code	434、320T7、114T30 (See the detailed information in Contact layout)				
Type of contact	M—Pin F—Receptacle				
Terminating form	E0—Elbow PCB soldering, pin length 3.12 D0—Straight PCB soldering, pin length 7.35				

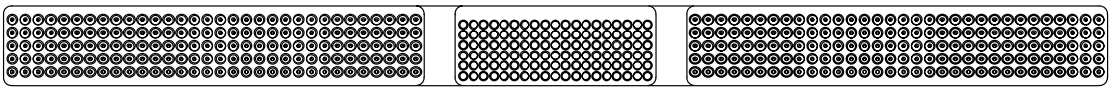
Note:

1）Terminating length can be designed according to the customers' needs.

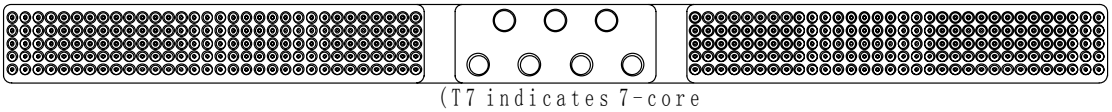
Contact layout (front face of pin inserts illustrated)

NTC series products usually consists of three modules, plug for P0, P1, P2 module, receptacle for J0, J1, J2 module, through the different configuration of three modules to realize the different contact arrangement and combination. Following is some commonly used contact arrangement and combination. If these can't meet customers' demand, we can develop new contact arrangement according to user requirements.

434

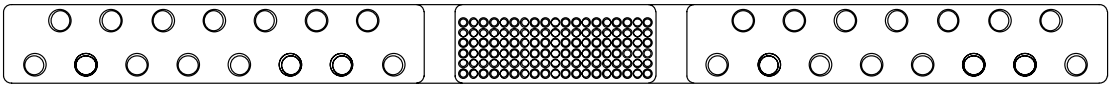


320T7



(T7 indicates 7-core coaxial contacts)

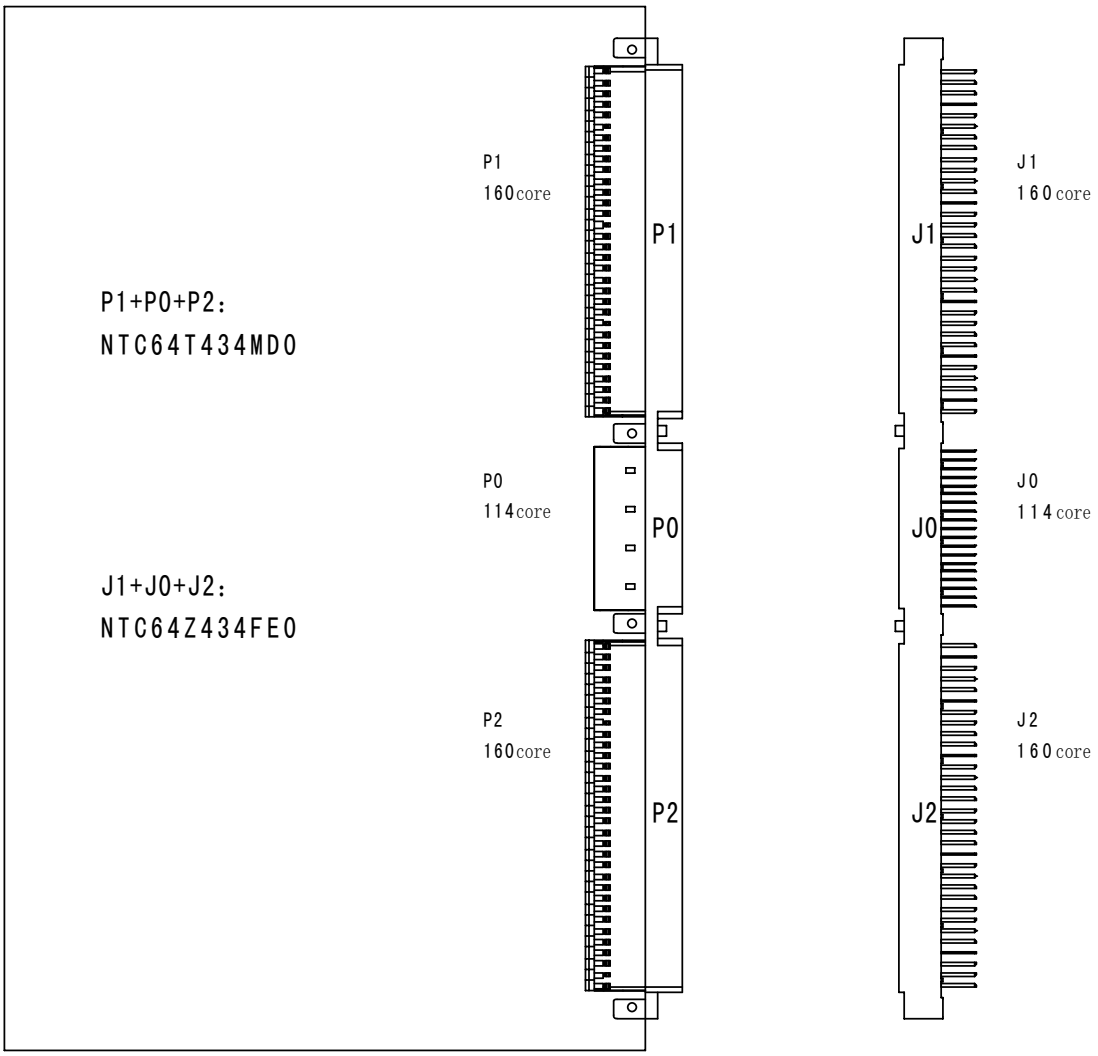
114T30



(T30 indicates 30-core coaxial contacts)

T7 means 7 cores coaxial contacts
T30 means 30 cores coaxial contacts

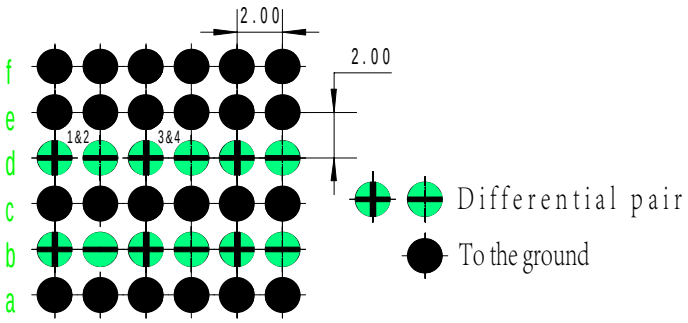
Connector configuration demonstration



daughter board rear panel

Differential pairs arrangement

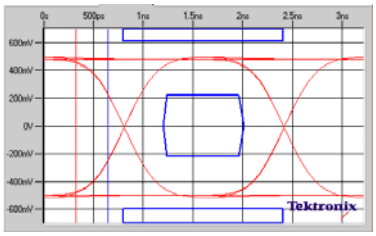
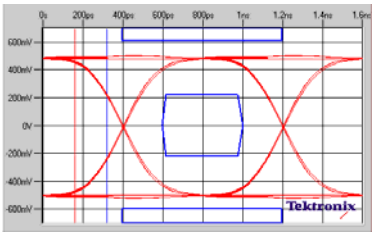
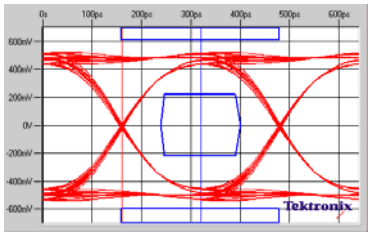
P0/J0 module is high speed signal area, which can install differential contact pairs, insert gap 2mm, differential characteristic impedance 100Ω, transmission rate 3.125Gbps; See the following recommend differential pairs arrangement:



Eye diagram

According to the above recommended differential pairs arrangement, connector eye diagram got under the 622 MBPS, 1.25 G bps and 3.125 G bps transmission rate as shown in the diagram below.

Test input voltage is 1 v, in three transmission rate 50% in the next cycle period of output voltage are more than 434 mV.

622Mbps	1.25Gbps	3.125Gbps
		

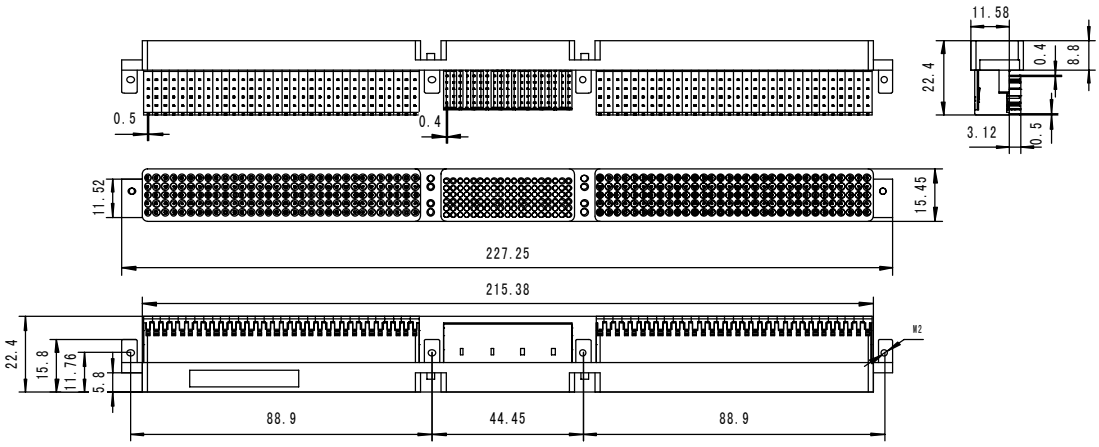
[Transmission delay and delay deviation]

Hole arrangement marks	a	b	c	d	e
Transmission delay (ps)	68	90	112	134	156
delay deviation (ps)	22	22	22	22	
Max data rate	3.125Gbps				

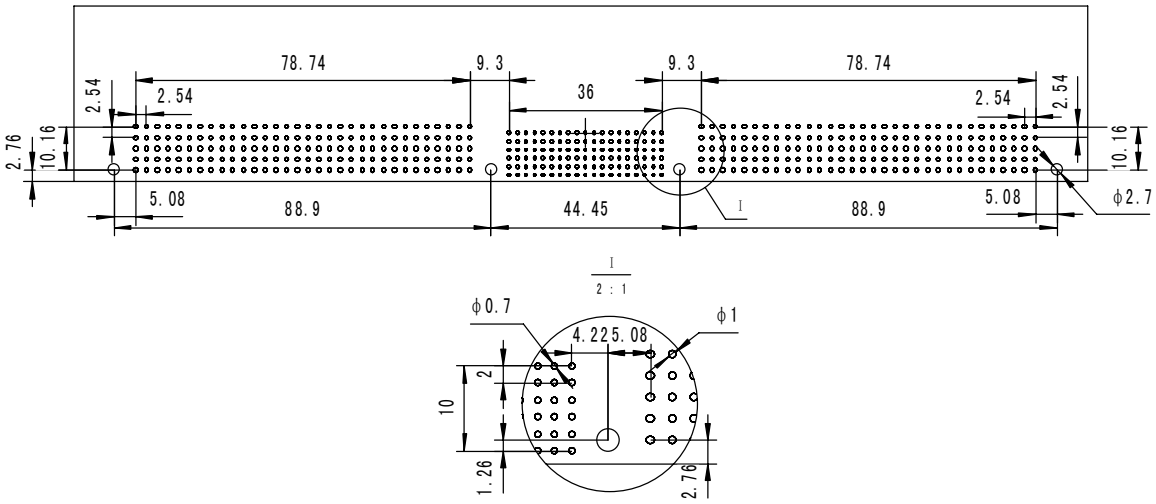
Outlet dimension and recommend PCB cut-out dimension

Plug

The graphical representation takes the NTC4T434ME0 for example

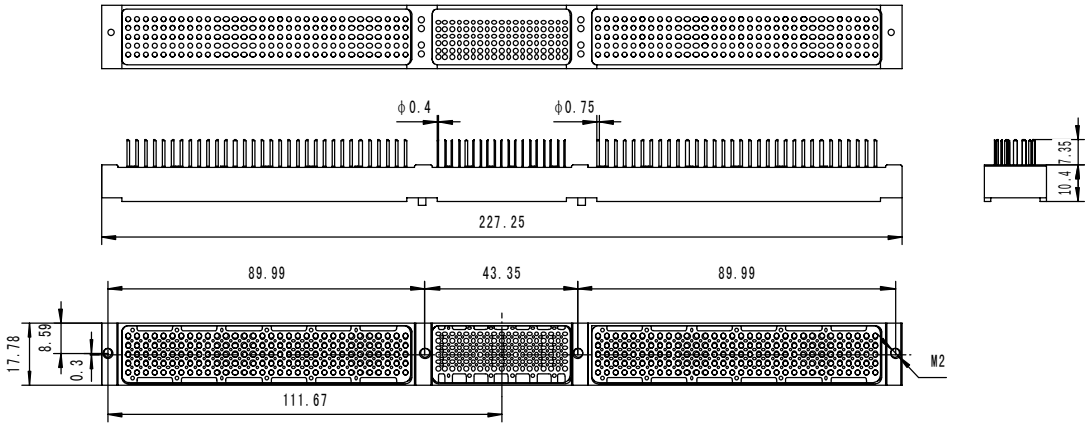

11.58
22.4
0.4
8.8
3.12
10.5
0.5
0.4
11.52
15.45
227.25
215.38
22.4
15.8
11.76
5.8
M2
88.9
44.45
88.9

Recommend PCB cut-out dimensions

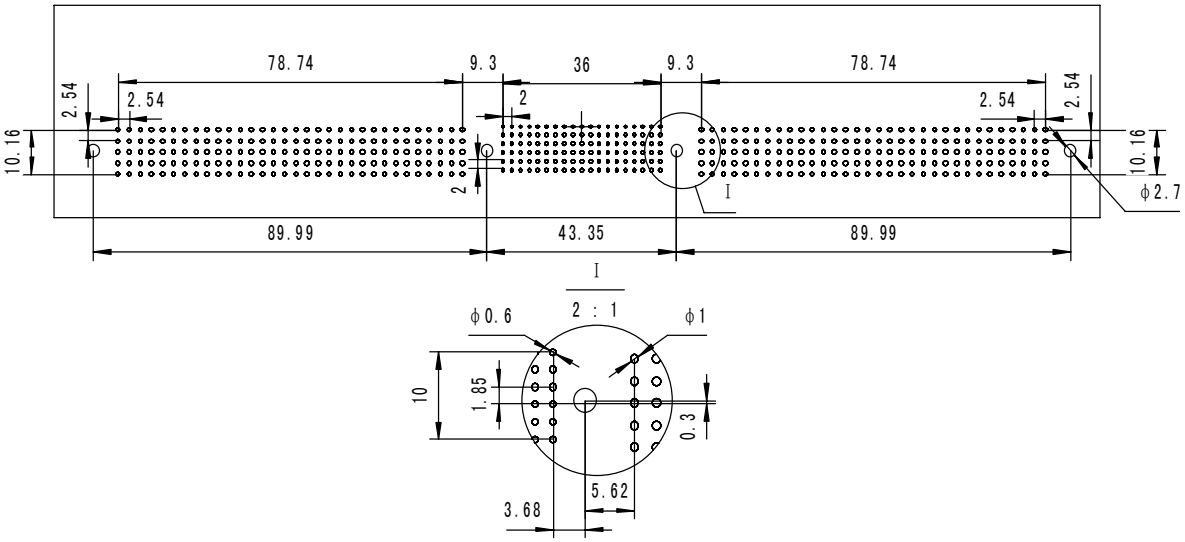


Receptacle

The graphical representation takes the NTC64Z434FD0 for example.



Recommend PCB cut- out dimensions



[Mating size]